

## CLAIMS

1. A fiber optic polarizer comprising:
  - a chuck defining a groove in a face along a lengthwise direction thereof;
  - a single mode fiber installed on the face around one end of said groove;
  - a polarization-maintaining fiber installed on the face around the other end of said groove; and
  - a polarization beamsplitter disposed between said single mode fiber and said polarization-maintaining fiber; wherein
    - the polarization beamsplitter is positioned to respectively align with the single mode fiber and the polarization-maintaining fiber at two opposite ends thereof to allow unpolarized light from the single mode fiber to enter the polarization beamsplitter at one end thereof and an o-ray of a polarized light to leave the polarization beamsplitter toward the polarization-maintaining fiber.
2. The polarizer as defined in claim 1, wherein the said polarization beamsplitter is fixed to a wafer above the chuck.
3. The polarizer as defined in claim 1, wherein a box hermetically encloses the check and the polarization beamsplitter with portions of the single mode fiber and polarization-maintaining fiber exposed to an exterior.
4. The polarization as defined in claim 1, wherein said groove is V-shaped, and both the single mode fiber and the polarization-maintaining fiber are fixed thereto.
5. A method of polarizing an unpolarized light, comprising the steps of:
  - providing a box enclosing a chuck with a through V-groove along a lengthwise direction thereof, and a wafer above said check;
  - installing a single mode fiber in said V-groove around one end thereof;
  - installing a polarization-maintaining fiber in said V-groove around the other end thereof;

fixing a polarization beamsplitter to the wafer, and between and in alignment with said single mode fiber and said polarization-maintaining fiber; and

having the unpolarized light enter said box via said single mode fiber and through said polarization beamsplitter, and having an o-ray of a polarized light leave said box via said polarization-maintaining fiber.